

for communicating HTTP messages with the interface server 122. The transaction services application may also communicate through a network such as network 130 in a manner later explained. The transaction services application also provides a server function which enables the transaction services application to carry out the functions of the device server 92 in the previously described embodiment.

[0148] The automated banking machine of the alternative embodiment further includes JAVA common device interfaces schematically indicated 148. The JAVA common device interfaces in the preferred embodiment are related instances of applets which control and coordinate the operation of the functional devices 150 of the machines which perform transaction functions. The functional devices may include devices of the types described in connection with the previous embodiment or other types of devices which operate to carry out a function related to a transaction. The JAVA common device interfaces 148 communicate with the functional devices through common device interfaces schematically represented 152. The common device interfaces (CDIs) provide an interface that controls the electromechanical modules in the functional devices included in the automated banking machine. The common device interfaces are schematically shown in connection with a diagnostic server 154. The diagnostic server operates in a manner similar to server 109 of the previously described embodiment. The diagnostic server 154 is useful in diagnosing status and in correcting problems with the devices in the automated banking machine.

[0149] Referring again to Figure 26 the backstage frame 140 within the terminal theater portion 138 is a component called the backstage applet 156. The backstage applet 156 is preferably a relatively thin component. Instructions referred to as script included in documents accessed by the browser selectively cause the backstage applet to notify a terminal director when an action is to take place in response to the instructions included in the accessed document. The backstage applet also operates to request that a new HTML document be accessed. The backstage applet also provides access to the shared transaction data object previously discussed which holds transaction data.

[0150] The theater frame 142 controls the user interface as seen by the user of the automated banking machine terminal. Client HTML schematically represented 158 in the theater frame 142 defines the identifying indicia associated with events sent to a director manager through the backstage applet and provides an interface to the director manager's public methods. The director manager schematically indicated 160 in Figure 26, has a class which resides in the transaction services application (TSA) 146 as shown. The director manager class residing in the TSA process is operative to load the terminal directors 144 to the HTML document handling portion. The director manager also includes a backstage applet class that resides in the backstage frame 140.

The backstage applet class of the director manager provides an interface for the client HTML to make requests on the director manager. Instructions in HTML documents can pass events through the backstage applet 156 to the director manager. Such events include a request to authorize a transaction. Such requests may also include indications that the customer has completed a transaction or that a document loaded by the browser includes instructions requesting that the session be terminated. Other events which can be passed through the director manager include print events. Other events which can be passed through the backstage applet to the director manager include an indication that an entry was cancelled, or other defined user events.

[0151] In response to receiving events the director manager of the embodiment shown responds to instructions in documents accessed by the browser to perform functions which include changing the content of the theater frame 142. The director manager responsive to such instructions, also changes the active terminal director class. The director manager also caches terminal director classes for later use or loads terminal director classes and HTML documents from a list of available servers. The director manager also provides access to the shared transaction data object holding transaction data for a particular transaction. The director manager also sends terminal theater events to the backstage control class of the current terminal director and provides a screen timeout timer. Of course in other embodiments the terminal director may carry out other functions.

[0152] In operation of the alternative embodiment shown in Figure 25 the terminal directors 144 in the transaction services application 146 enables selectively accessing documents with the HTML document handling portion 128. The documents accessed may include instructions which are used to operate the automated banking machine and the functional devices thereon. The transaction services application 146 is further operative to communicate the HTTP messages which are passed to the interface server 122 and which are used to generate conventional ATM messages which can be handled by the host 120. The dispensing of currency and other transfers of value are carried out in response to approval from the host 120, while the interface and other functions are controlled through instructions in documents accessed through the browser.

[0153] In one preferred embodiment the ATM or other transaction machine communicates with the conventional ATM host by passing the transaction data object between the computer in the ATM and the interface server. This transfer is preferably accomplished by the remote message invocation (RMI) feature of software such as JAVA. Of course other methods for transferring the data object file using HTTP may be used.

[0154] As previously discussed, the transaction data object holds transaction data. The machine acquires data pertinent to the transaction such as account data from a

card, a customer's PIN number, requested transaction(s) and amount(s), and includes this data among the transaction data.

[0155] Once the data needed to generate a conventional ATM transaction message is represented in the transaction data, the data object is transferred to the interface server. The interface server is in operative connection with a database 123 or other item holding conversion data as schematically indicated. The conversion data is used by the software associated with the server to generate conventional ATM transaction request message to the host 120. The conventional message may be formatted as a conventional 91X message or other conventional non-HTTP transaction message.

[0156] After processing the host 120 responds with a conventional response message. The components of the response message are received at the server and processed responsive to the conversion data to produce modified transaction data in the data object. This modified transaction data preferably includes data indicative of whether the requested transaction is authorized or denied, as well as other data. For example, if the transaction is denied it may include data which is indicative of the reason for the denial.

[0157] The transaction data object with the modified transaction data is then transferred to the computer operating the ATM by RMI or other transfer method. The transaction services application 146 operating in software receives the data object and operates the transaction function devices responsive to the modified transaction data. The transaction data object has the transaction data therein further modified by the inclusion of information concerning operation of the devices. After the devices have operated, the transaction data object with the further modified transaction data is passed back to the interface server 122. The modified transaction data is then used to generate a message to the ATM host. The message to the host includes data corresponding to the modified transaction data. Usually this message is a conventional non-HTTP completion message indicating whether the transaction was successfully carried out by the transaction function devices.

[0158] The format of the non-HTTP conventional transaction messages may be readily changed in the described embodiment. This can be achieved through the use of plug-ins. The plug-ins are operative to put data into, and to extract data from, the transaction data object. The plug-ins achieves conversion between the transaction data and desired conventional non-HTTP messages. The use of plug-ins enables more readily using the ATM of the described embodiment in connection with varied types of conventional transaction networks.

[0159] Transaction data in the transaction data object is also preferably operative to have the computer operate the browser to access selected HTML documents. This may be done to indicate that the transaction is authorized or denied, as well as to access specific documents responsive to components of the message. For

example, customers of banks other than the one operating the ATM may be given certain promotions not presented to the bank's existing customers. The transaction data indicative of why a transaction is denied can be used to access documents which provide an explanation, or can encourage the customer to take other action, such as to take a cash advance on a credit card or to apply for a loan.

[0160] The system schematically shown in Figure 25 is an example of an automated banking machine system that achieves the wide variety of interface options available through the use of an HTML interface while preserving compatibility with existing banking machine systems and the security techniques associated therewith. Of course in other embodiments alternative approaches and configurations may be used.

[0161] A further advantage incorporated into the system schematically represented in Figure 25 is the ability to operate the software components of the described embodiment of the present invention in existing automated banking machines. As will be appreciated, the handling of HTML documents in conventional computers requires inputs through a QWERTY type keyboard as well as mouse clicks in locations corresponding to icons or other features on HTML documents to successfully navigate and use such documents. Conventional automated banking machines generally do not include a mouse or full keyboard. Rather conventional automated banking machines generally include an alphanumeric keypad similar to that used on telephones, as well as function keys. Embodiments of the present invention enable the operation of the system with terminals which have such interfaces operate in a manner which attains benefits as described elsewhere.

[0162] Figure 27 shows an example of a conventional automated banking machine interface 162. Interface 162 includes an output device which includes a screen 164. Screen 164 may be a CRT, LCD or other conventional display screen. In the embodiment shown screen 164 is not a touch screen as in the previously described embodiment. A plurality of function keys 166 are disposed at locations adjacent to the screen 164. A keypad 168 is also included in the interface 162. Keypad 168 includes alphanumeric keys as well as certain outlet dedicated keys such as "cancel", "correct" and "ok". Other keys on the keypad are generally blank but in some instances may be used.

[0163] In the operation of a conventional automated banking machine, screen data which is generated from information stored in the terminal memory produces defined transaction screens which are presented graphically on the screen 164. The screens appear in a sequence in response to the transaction function selected by the customer. Conventional screens also generally include text or graphics representative of selections that can be made by a customer. These text or graphic options generally includes lines or other indicia which extend to the edges of the screen adjacent to one of the

function keys 166. A user is enabled to select the options by pressing the function key which is pointed to by the selection. Likewise in the operation of the automated banking machine a user is enabled to input the alphanumeric characters which comprise the PIN number as well as numeric amount information and other instructions by pressing the keys in the keypad 168.

[0164] In one embodiment of the present invention the software operated in the automated banking machine operates to convert standard ATM key inputs to operating system events such as a mouse click in a desired location or an input from a QWERTY type keyboard. The software components which enable carrying out this function are shown in Figure 28-30. These functions include a keypad applet 170. The keypad applet 170 in the described embodiment is included among the applets in the terminal directors 144. The keypad applet 170 supports a subset of the keyboard common device interface (CDI) functionality.

[0165] The keypad applet 170 coordinates with a keyboard command server which operates in the transaction services application 146. The server in the transaction services application communicates with the common device interface for the keypad and function keys, schematically indicated 172. The key CDI in the preferred embodiment is a JAVA program which is referred to as a wrapper for the common device interface associated with the function keys and the keypad.

[0166] The software further includes a keyboard mapper program schematically indicated 174. The keyboard mapper in the preferred embodiment is in connection with a database 176 which stores a plurality of map sets. In the preferred embodiment the keyboard mapper is an extension of the keyboard class of objects used for operating the keyboard. The keyboard mapper operates to store sets of keymaps in the database 176. This is accomplished by reading information in a configuration database for the ATM to obtain the keymaps that are operated in the particular machine. During operation, the keyboard mapper selects one of the keymaps as the current set. This is done in response to the keypad applet and is based on instructions in HTTP records which are selectively accessed. The keyboard mapper may select keymaps responsive to instructions in HTML documents loaded through the browser. The keyboard mapper is also operative to enable the keypad and function keys appropriate for the particular mapset selected. The keyboard mapper is further operative responsive to the selected mapset to translate a keypad input signal or a function key input signal into a respective keyboard or mouse input signal which is then delivered to the keyboard input stream or the mouse input stream of the operating system of the computer in which the software operates.

[0167] In the preferred embodiment the mapsets are each comprised of hash tables. Keymap objects are stored as values in the hash tables such that each object includes the values and operations necessary to convert

any appropriate ATM key event to an operating system input event.

[0168] As can be appreciated in the case of function keys adjacent to the ATM screen it may be desirable to provide a mouse input to the mouse input stream that corresponds to a particular coordinate location for the mouse input. This is provided by the keyboard mapper using the selected keymap set. The various keymap sets enable the different function keys to provide different types of inputs to the computer operating system responsive to the HTML document displayed on the browser. Further the keyboard mapper causes the pressing of a selected key to produce an input corresponding to a mouse click at a selected x.y coordinate position on the screen. It should be understood that either keypad keys or function keys can be used to produce mouse inputs. Likewise function key inputs may be converted to keyboard inputs. In some embodiments however it will be desirable to disable the mouse indicator on the screen such that the user does not notice a usual mouse icon. Such disabling may include in some embodiments reducing the size of the mouse icon such that it is so small that it cannot be readily seen by a user of the machine.

[0169] During portions of some transactions it may be unnecessary for the user to press any keys. In such situations some preferred embodiments of the invention operate to disable the keypad keys and/or function keys. Because resources of the computer are used in polling such keys for inputs, the cessation of such polling during appropriate times enables the computer resources to be devoted to carrying out other functions. This will increase the speed at which other activities may be carried out. This may be accomplished in some embodiments by the keypad applet operating to remove the key devices from a poll list.

[0170] Figures 28-30 include schematic depictions of examples of the operation of the keyboard mapper and the keypad applet. Figure 29 shows an example of an input to the keypad 168. In this example the keypad applet 170 generally in response to instructions in an HTTP record such as an HTML document or other events, transmits and enables events to the transaction services application 146. In response a mapset is selected from the database 176 corresponding to the particular map name. The keyboard command server is further operative to enable the appropriate keys of the ATM.

[0171] In this example, in response the customer pressing the "OK" key on the keypad the CDI generates an appropriate signal to the transaction services application. As will be noted from Figure 27 a "OK" key is referred to by convention as the "J" key of the ATM interface. The transaction services application transmits the signal generated from the pressing of the "J" key by the customer to the keyboard mapper 174. In response to receiving the signal, the keyboard mapper operates to resolve the object in the mapset corresponding to the map name which will convert the function key input sig-

nal to a keyboard input signal which is recognized by the operating system. By calling the selected object from the mapset, a keyboard input signal is produced and delivered into the keyboard stream of the computer. This is represented by keyboard stream 178. In the embodiment shown the keyboard stream is an input to the Windows NT® operating system. The keypad applet 170 operates to sense the input through its corresponding key listener. Applet 170 is also operative to receive the event and may operate to display an icon or other graphic corresponding to what the customer has input.

[0172] Figure 28 shows operation of the keyboard mapper in situations where the transaction services application operates to prevent transmitting the data input by the customer to the applet 170. This may be desirable for example, in situations where the input by the customer is the customer's PIN or other data which is not to be displayed. In these circumstances the transaction services application 146 operates to hold the data input by the customer and to send only a signal representative of a holding character, in this case a "*" symbol back to the browser. This is done selectively in response to the instructions contained in documents accessed by the browser or in other HTTP records accessed by the computer which indicates that the input by the customer corresponds to their PIN or other data which is not to be sent to the browser. In the example shown in Figure 28 only the holding character is passed through the keyboard mapper to the browser. In situations where the HTTP record accessed invokes methods in which numerical values are to be sent to the browser and/or displayed on the screen (such as the amount of a withdrawal transaction) the signal sent by the transaction services application to the browser is indicative of the numerical value associated with the key pressed.

[0173] Figure 30 is a further example of the operation of the keyboard mapper in this case the input corresponds to a function key 166. In this case the input is caused by pressing the function key "A" which is shown adjacent to the upper right hand corner of the screen as shown in Figure 27. The signal generated in response to pressing the function key is passed to the keyboard mapper which in response to the data obtained from the data store 176 outputs a mouse input corresponding to a mouse click. The mouse input includes data representative of the x and y coordinates on the screen where the mouse click is to be provided. This mouse input signal is passed to the mouse stream input schematically represented 180.

[0174] As will be appreciated to enable the automated banking machine which processes HTML documents to operate using a conventional ATM interface the mouse input will generally include coordinate locations which correspond to a location on the screen adjacent to the particular function key. This is because the icon, line, text or other indicia which the customer is selecting by pressing the key will preferably appear or extend on the screen adjacent to the key. In this way the customer is

aware through the visual presentation what key to press to make a corresponding selection. A number of function keys adjacent to the screen may be operative at any one time. The customer may make selections by pressing a function key at one location and then a function key at another location disposed from the first location. This will result in signals being sent to the mouse stream corresponding to mouse clicks at coordinates on the screen adjacent to the function buttons pressed by the customer. During transactions various combinations of function and keypad keys may be operative and mapped to various keyboard and mouse inputs as determined by the selected mapsets. In addition developers may develop special mapsets corresponding to the particular graphics in HTML documents which are displayed.

[0175] In the foregoing manner keypad inputs to a conventional ATM or other automated banking machine keypad can be translated into conventional keyboard or mouse inputs which can be identified and processed in a conventional keyboard input stream or mouse input stream to a computer. Likewise function keys may be translated into mouse inputs at selected locations and delivered into the mouse input stream for processing by the computer or may be converted into keyboard inputs and delivered to the keyboard input stream. A further advantage of the described terminal configuration is that keys may be selectively disabled except when they are needed. This may reduce instances of attempts to improperly access the machine by pressing keys on the keyboard. Further as previously discussed steps may also be taken to disable keys when they are not needed to increase transaction processing speeds.

[0176] A further advantage achievable with some embodiments of the present invention is the ability of the automated banking machine to provide printed documents based on instructions in HTML documents. Such printed items may include tickets, travelers checks, money orders, bank checks, scrip or other types of documents. The ability of preferred embodiments to access and process HTML documents enables the printing of graphics and other indicia which can produce printed documents having selected appearance features and selected ornamental designs. This can reduce the need to utilize preprinted forms and also enables the printing of a greater variety of printed formats. Further the configuration of some embodiments of the machine enable printing only selected portions of transaction information for record keeping purposes within the machine while providing versions including enhanced graphics or other attractive features to customers.

[0177] Figure 31 is a schematic representation of the operation of the system in printing forms using a printer in an automated transaction machine. The preferred form of the invention uses the WIN32 printer services which operate under Windows NT® 4.0. In the exemplary transaction shown, the director manager class 180 operating in the terminal theater portion 138 initiates a print receipt transaction by requesting a printer director

182 to print a receipt. The printer director in one preferred embodiment is a collection of instances of related JAVA beans which operate to carry out printing activities, and is one of the directors among the terminal directors 144. The printer director includes a print class which is schematically shown separately which is operative to invoke a print URL method. The printer class in the preferred embodiment includes access to the shared transaction data object which includes the customer specific information concerning the transaction that includes indicia representative of information to be printed. In the case of an automated banking machine this may include for example indicia representative information which is read from a customer's card input to the machine and read by a card reader. This would include for example the customer's name and account number. The other transaction information may include the types of transactions conducted such as a deposit, withdrawal or inquiry as well as the amount involved in each respective transaction.

[0178] The transaction services application 146 receives the print request and passes the URL string to the WIN printer object 184 by the print URL method. The URL address in one preferred embodiment is the address of an HTTP record such as an HTML document that will be used to format the document to be printed, in this case a receipt. This HTML document contains the embedded JAVA script that processes transaction data from the transaction data object. The URL address of the document may be on a local machine or may be retrieved from another server such as through a network schematically indicated 186. Network 186 may be a local area network or a wide area network depending on the configuration of the machine.

[0179] The WIN printer object 184 next navigates to the address of the document to be accessed. This is done in the preferred embodiment using Microsoft's C Web Browser2 ActiveX control. When the HTML document has been loaded the ActiveX control automatically begins processing the content of the accessed document. The transaction services application 146 invokes the print URL method of the WIN printer object 184. The WIN printer object uses the ActiveX control to print the current HTML document. This printing is processed by the Windows NT® print spool and graphics components.

[0180] The JAVA CDI receives an event from the print monitor component 192 that indicates the completion of print spooling. This indicates that a file is now available to be read and sent to the common device interface (CDI) 188 of the receipt printer.

[0181] Next a printer object 190 invokes a read data function in the print monitor 192 to determine the location and size of the print data file. The print object 190 sends the data or the path name of the data file to the printer CDI 188. The printer CDI 188 then passes the print data to the printer hardware. This results in printing of the document.

[0182] Once the receipt is printed the applet from the printer director 182 issues a request to deliver the printed receipt. The delivery request is passed through the transaction services application 146 to the printer object 190. The printer object 190 invokes the deliver method on the printer CDI 188 to cause the receipt to be delivered to the user of the machine. The operation of the software components enables selectively accessing document formats as well as using instructions contained in the documents to include transaction data within the printed documents. This enables producing documents of varied types. In addition it enables providing printing different types of documents for different customers. This may be desirable when providing marketing information, coupons or similar indicia on transaction receipts. This approach further simplifies providing printed formats in various languages by developing HTML documents which provide printed forms in different languages. In addition the methods described herein may be used for providing marketing to customers by profile or types of customer categories, as well as on a segment of one basis.

[0183] While the printing method previously described is discussed in connection with delivering transaction receipts, similar methods may be invoked for the printing of statements for customers as well as for printing a transaction journal within the automated banking machine. Further by accessing selected documents controlling the format of printing the information journal records may be provided with consolidated information in a manner which enables conserving journal paper within the machine by not printing promotional or other types of information that is provided on customer documents.

[0184] The printing method herein described also enables printing various types of optical indicia such as bar code or other types of machine readable indicia which can be used for printing coupons, checks or similar articles. Such coding may facilitate tracking the use of such items by customers for purposes of evaluating the effectiveness of various marketing efforts. In addition machine readable indicia may be used for printing on items such as deposit envelopes and/or in transaction journals. Such printing may facilitate reading such items by machine to verify the contents of deposits.

[0185] The printing capabilities achieved through the presently described methods also enable the printing of selected graphical materials. This may include for example materials which include imbedded digital signatures which can be used to verify the genuineness of the items printed. This may be particularly useful for example in situations where the transaction machine is used to print scrip, travelers checks, betting slips or other items having independent value. In addition printed documents in full color may be produced by including a color printer in the transaction machine.

[0186] Computer software used in operating automated transaction machines embodying the present inven-

tion and connected computers may be loaded from articles of various types into the respective computers. Such computer software may be included on and loaded from one or more articles such as diskettes or compact disks. Such software may also be included on articles such as hard disk drives, tapes or ready only memory devices. Other articles which include data representative of the instructions for operating computers in the manner described herein are suitable for use in achieving operation of transaction machines and systems in accordance with embodiments of the present invention.

[0187] The exemplary embodiments of the automated banking machines and systems described herein have been described with reference to particular software components and features. Other embodiments of the invention may include other or different software components which provide similar functionality.

[0188] In the foregoing description certain terms have been used for brevity, clarity and understanding. However no unnecessary limitations are to be implied therefrom because such terms are for descriptive purposes and are intended to be broadly construed. Moreover the descriptions and illustrations herein are by way of examples and the invention is not limited to the details shown and described.

[0189] In the following claims and clauses any feature described as a means for performing a function shall be construed as encompassing any means capable of performing the recited function and shall not be deemed limited to the particular means shown in the foregoing description or mere equivalents thereof.

[0190] Having described the embodiments, aspects, features, discoveries and principles of the invention, the manner in which it is constructed and operated and the advantages and useful results attained, the new and useful structures, devices, elements, arrangements, parts, combinations, systems, equipment, operations, methods, processes and relationships are set forth in the appended independent and dependent claims and clauses, wherein it will be understood that features of the independent and dependent clauses may be combined with the independent and dependent claims as appropriate and in combinations other than those explicitly set out in the clauses and claims.

1. Apparatus comprising:
an automated transaction machine, including:

an output device, wherein the output device outputs information, whereby a user is enabled to perceive outputs from the output device:

an input device, wherein the input device is operative to receive inputs, whereby a user is enabled to provide inputs to the machine:

a transaction function device, wherein the transaction function device is selectively oper-

ative to carry out a transaction function:

a computer, wherein the computer is in operative connection with the output device, the input device and the transaction function device:

software executable in the computer, wherein the software includes a browser, wherein the browser is operative to process HTML documents including instructions therein, and wherein the transaction function device is operative to carry out the transaction function responsive to the browser processing a document including an instruction to operate the transaction function device.

2. The apparatus according to clause 1 wherein the transaction function device includes a sheet dispenser.

3. The apparatus according to clause 1 wherein the transaction function device includes a card reader.

4. The apparatus according to clause 1 wherein the transaction function device includes a printer.

5. The apparatus according to clause 1 wherein the transaction function device includes a depository.

6. The apparatus according to clause 1 wherein the transaction function device includes a keyboard.

7. The apparatus according to clause 1 wherein the software is operative responsive to an instruction to access an HTTP record address, wherein the HTTP record address corresponds to an HTTP record including instructions for operating the transaction function

8. Apparatus comprising:
an automated transaction machine including:

at least one type of transaction function device, wherein the type transaction function device is selectively operative to carry out a transaction function:

a computer, wherein the computer is in operative connection with the transaction function device:

software executable in the computer, wherein the software includes a browser, wherein the computer operates the browser to access an HTML document responsive to the type of the transaction function device in the machine.

9. The apparatus according to clause 8 wherein the machine includes a plurality of types of transaction function devices, and wherein the computer operates the browser to access the document by generating an address and wherein at least a portion of the address is indicative of at least one of the types of transaction function devices included in the ma-

chine.

10. The apparatus according to clause 8 wherein the type transaction function device includes a depository.

11. The apparatus according to clause 8 and further comprising a server, wherein the server is operative to deliver at least one document to the browser, wherein the document is delivered responsive to the one type of transaction function device in the machine.

12. The apparatus according to clause 11 wherein the transaction function device in the machine includes a sheet dispenser, and wherein the machine does not include a depository for carrying out deposit transactions, and wherein the one document delivered by the server includes no reference to a deposit transaction.

13. The apparatus according to clause 11 wherein the transaction function devices in the machine include a sheet dispenser for carrying out a dispense transaction and a depository for carrying out deposit transactions, and wherein the one document the server is operative to deliver to the browser includes a reference to both a dispense transaction and a deposit transaction.

14. Apparatus comprising:
an automated transaction machine including:

a plurality of types of transaction function devices, wherein each type of transaction function device is selectively operative to carry out a transaction function:

at least one output device, wherein an output device is selectively operative to provide user outputs:

a computer, wherein the computer is in operative connection with a memory, the output device and each of the transaction function devices, and wherein the memory includes device data representative of a plurality of transaction function devices in the machine:

software executable in the computer, wherein the software includes a browser:

a server in operative connection with the computer, and a plurality of HTML documents deliverable through the server:

wherein the computer is operative to communicate data representative of the device data to the server and wherein the server is operative responsive to receipt of the device data to deliver at least one HTML document to the browser for processing wherein the computer is operative responsive to the one HTML document

to operate the output device.

15. The apparatus according to clause 14 wherein the one document includes instructions to operate at least one device, and wherein the computer is operative responsive to the one document to operate the device.

16. The apparatus according to clause 14 and further comprising server software in operative connection with the server, wherein the server software is operative to generate the one document responsive to the receipt of the data representative of the device data.

17. A method comprising the steps of:

providing a plurality of HTML documents, wherein each of the documents is accessible through a server, wherein a first document includes a first reference, wherein the first reference is to a first transaction type carried out by a first transaction function device, and wherein a second document is accessible through the server and includes a second reference, wherein the second reference is to a second transaction type carried out by a second transaction function device; and

accessing with a browser operating in a computer in an automated transaction machine, either the first or the second document wherein the first document is accessed when the machine includes the first transaction function device but not the second transaction function device, and wherein the second document is accessed when the machine includes both the first and the second transaction function devices.

18. The method according to clause 17 wherein the accessing step includes accessing the first document at a first address, or accessing the second document at a second address.

19. The method according to clause 17 and prior to the providing step further comprising the step of delivering to the server from the machine device data representative of the transaction function devices included in the machine, wherein the document accessed in the accessing step is accessed responsive to the device data.

20. A system comprising:

at least one server:

a plurality of HTML documents accessible through the server, wherein each of the documents is accessible at a corresponding document address, wherein the documents include a first document accessible at a first address,

the first document including first material:

a first transaction machine, wherein the first transaction machine is located at a first location, wherein the first material is targeted to users of the first transaction machine, wherein the first transaction machine includes a first computer and a first output device, wherein the first output device is in operative connection with the first computer; and

first software executable in the first computer, wherein the first software includes a first browser, wherein the first browser is operative to access the first document at the first address and wherein the first computer is operative responsive to the first document to output the first material through the first output device.

21. The system according to clause 20 wherein the documents include a second document accessible at a second address, the second document including second material, and further comprising:

a second transaction machine, wherein the second transaction machine is located at a second location, wherein the second material is targeted to users of the second transaction machine, wherein the second transaction machine includes a second computer and a second output device, wherein the second output device is in operative connection with the second computer; and

second software executable in the second computer, wherein the second software includes a second browser, wherein the second browser is operative to access the second document at the second address and wherein the computer is operative responsive to the second document to output the second material through the second output device.

22. The system according to clause 20 wherein the first material includes material in more than one human language.

23. The system according to clause 20 wherein the first material includes currency exchange information.

24. The system according to clause 20 wherein the first material includes advertising material.

25. The system according to clause 21 wherein the first material includes first advertising material and the second material includes second advertising material.

26. The system according to clause 20 wherein the first transaction machine further includes a first sheet dispenser device in operative connection with

the first computer, and wherein the documents include a further document accessible at a further address, wherein the further document includes a dispense instruction, and wherein the first computer operates to cause the first sheet dispenser device to dispense a sheet responsive to the first browser accessing the further document.

27. The system according to clause 21 wherein the first transaction machine includes a first sheet dispenser device in operative connection with the first computer, and wherein the second transaction device includes a second sheet dispenser device in operative connection with the second computer, and wherein the documents include a further document accessible at a further address, wherein the further document includes a dispense instruction, and wherein the first computer operates to cause the first sheet dispenser device to dispense a sheet responsive to the first browser accessing the further document, and wherein the second computer operates to cause the second sheet dispenser device is operative to dispense a sheet responsive to the second browser accessing the further document.

28. The system according to clause 20, and further comprising a machine data store in the machine, wherein the machine data store is in operative connection with the first computer, and wherein the data store includes location data representative of the first location, and further comprising software in the first computer operative to communicate the location data to the server and further comprising software in operative connection with the server, wherein the software is operative responsive to receipt of the location data to cause the server to deliver the first document to the first browser.

29. The system according to clause 28 and further comprising a server data store in operative connection with the server, wherein the server data store includes document data, and wherein the server is operative to generate the first document responsive to the location data and the document data.

30. A method comprising the steps of:

a) providing a plurality of HTML documents, wherein each of the documents is accessible at a corresponding address through a server, wherein a first document includes first material, and wherein a second document is accessible and includes second material, the first material targeted to users of a first transaction machine located at at least one first location, and the second material targeted to users of a second transaction machine located at at least one second location;

b) accessing the first document with a first browser in the first transaction machine;

- c) outputting the first material through a first output device in operative connection with the first browser on the first transaction machine;
- d) accessing the second document with a second browser in the second transaction machine; and
- e) outputting the second material through a second output device in operative connection with the second browser in the second transaction machine.
31. The method according to clause 30 wherein the providing step includes providing a further document including a dispense instruction therein, and further comprising the steps of:
- accessing the further document with the first transaction machine; and
- dispensing a sheet from a first sheet dispenser device on the first transaction machine responsive to the instruction in the further document.
32. The method according to clause 30 wherein step (b) comprises accessing the first document at a first document address and step (d) comprises accessing the second document at a second document address.
33. The method according to clause 30 and further comprising the steps of providing to server software in operative connection with the server, machine data representative of the first transaction machine and generating with the software responsive to the machine data, the first document.
34. Apparatus comprising:
- an automated transaction machine including:
- a card reader device, wherein the card reader device is operative to read card data from cards input by users of the machine;
- a computer in operative connection with the card reader device; and
- software executable in the computer, wherein the software is operative to generate an HTTP address and to operate the computer to access the address responsive to the card data.
35. The apparatus according to clause 34 and further comprising:
- an HTTP server in operative connection with a data store, and wherein the HTTP server is in operative connection with the computer, and a plurality of records in the data store accessible

by the server, and wherein responsive to input of a card into the card reader device the HTTP address generated by the computer corresponds to a first record, wherein the first record includes user information uniquely corresponding to the card input by the user.

36. The apparatus according to clause 35 wherein the user information includes information which uniquely identifies the user.
37. The apparatus according to clause 35 wherein the user information includes information corresponding to biometric data of the user.
38. The apparatus according to clause 35 wherein the transaction machine further includes an input device, wherein the input device is operative to accept a user input, and wherein the computer is operative to compare information in the first record to the user input to the input device.
39. The apparatus according to clause 38 wherein the input device includes a keyboard.
40. The apparatus according to clause 38 wherein the input device includes a biometric reader.
41. The apparatus according to clause 38 wherein the apparatus further comprises a sheet dispenser in operative connection with the computer, and wherein the sheet dispenser is operative to dispense a sheet responsive to the user input to the input device corresponding to the user information in the first document.
42. The apparatus according to clause 34 wherein the machine further includes a plurality of transaction devices, and a data store, wherein the data store includes device data representative of the transaction devices, and wherein the address is generated responsive to the card data and the device data.
43. The apparatus according to clause 34 wherein the machine includes a clock device, and wherein the address is generated responsive to the card data and the clock device.
44. The apparatus according to clause 34 and further comprising an output device in the machine in operative connection with the computer, and wherein the software in the computer includes a browser, and wherein software in the computer is operative to cause the browser to access a first HTML document responsive to the user information in the first record.
45. The apparatus according to clause 44 wherein the information in the first record includes data representative of customer preference data, and wherein the first document is accessed responsive to the customer preference data.
46. Apparatus comprising:
- an automated transaction machine including:
- a biometric input device, wherein the biometric

input device is operative to receive a biometric input from a user of the machine:

a computer in operative connection with the biometric input device; and 5

software executable in the computer, wherein the software is operative to generate an HTTP address and to access the address with the computer responsive to the input. 10

47. The apparatus according to clause 46 wherein the software in the computer includes a browser, and further comprising: 15

a sheet dispenser in operative connection with the computer; and

a server in operative connection with the browser, and a first HTML document accessible through the server, wherein the first document is accessible at the address, and wherein the first document includes user information, and wherein the sheet dispenser is operative to dispense a sheet responsive to the input corresponding to the user information in the first document. 20 25

48. The apparatus according to clause 46 and further comprising: 30

a sheet dispenser in operative connection with the computer; and

an HTTP server in operative connection with the computer, a first record accessible through the server, and wherein the first record includes user information, and wherein the sheet dispenser is operative to dispense a sheet responsive to the input corresponding to user information in the first record. 35 40

49. A method comprising the steps of:

a) reading indicia associated with a user with reading device in an automated transaction machine 45

b) responsive to the indicia read in step (a) generating an HTTP address with a computer in the machine 50

c) accessing user data corresponding to the read indicia from an HTTP record corresponding to the address 55

50. The method according to clause 49 and further comprising the steps of:

d) inputting a user input through an input device on the machine:

e) comparing data representative of the user input and the user data accessed in step (c) for correspondence; and

f) operating a transaction function device on the machine responsive to determining in step (e) correspondence between the user input and user data

51. The method according to clause 49 wherein the user data accessed in step (c) includes user preference data representative of at least one preference of the user, and further comprising the step of:

d) accessing at least one of a plurality of HTML documents with a browser operating in the computer, wherein the one document is selectively accessed responsive to the user preference data.

52. The method according to clause 49 wherein the user data accessed in step (c) includes user affiliation data representative of at least one affiliation of the user, and further comprising the step of:

d) accessing at least one of a plurality of HTML documents with a browser operating in the computer, wherein the one document is selectively accessed responsive to the affiliation data

53. The method according to clause 49 and further comprising the step of:

d) generating an HTML document responsive to the user data

54. Apparatus comprising:
an automated transaction machine including:

an output device:

a sheet dispenser;

a computer in operative connection with the output device and the sheet dispenser; and

software executable in the computer, wherein the software includes a browser, and wherein during operation of the sheet dispenser the software is operative to provide an output through the output device responsive to a first HTML document accessed by the browser.

55. The apparatus according to clause 54 wherein

the first document includes instructions which are operative when processed by the browser to provide the output through the output device, and to cause the computer to operate the sheet dispenser to dispense of a sheet.

56. The apparatus according to clause 54 and further comprising:

at least one server:

a plurality of HTML documents accessible through the server, wherein the first document is accessible through the server; and

wherein the browser is operative to access the first document through the server.

57. The apparatus according to clause 56 wherein the documents accessible through the at least one server includes a dispense document including a dispense instruction, and wherein the computer is operative responsive to processing the dispense document with the browser to operate the sheet dispenser responsive to the dispense instruction, and wherein the machine is operative to access the first document with the browser responsive to the dispense instruction.

58. The apparatus according to clause 57 wherein the machine comprises at least one additional transaction function device, and wherein the plurality of documents accessible through the at least one server includes an additional device document, wherein the additional device document includes an additional device instruction, and wherein the plurality of documents further includes a second document, and wherein the computer is operative responsive to processing the additional device document with the browser to operate the additional transaction function device responsive to the additional device instruction, and wherein the computer is operative to access the second document with the browser responsive to the additional device document.

59. The apparatus according to clause 57 wherein the dispense document includes a first document access instruction, and wherein the browser processes the first document responsive to the first document access instruction.

60. A method comprising the steps of:

accessing a transaction device operation document with a browser in an automated transaction machine, the transaction device operation document including at least one transaction device instruction;

operating a transaction device in the machine responsive to processing the transaction de-

vice operation document with the browser; and

outputting with an output device on the machine an output responsive to processing the transaction device operation document with the browser.

61. The method according to clause 60 and further comprising the step of:

accessing a first document with the browser responsive to processing the transaction device operation document accessed in the accessing step, wherein in the outputting step the output is generated responsive to processing the first document by the browser.

62. The method according to clause 61 wherein the transaction machine includes a first transaction function device and a second transaction function device, and wherein a transaction device operation document is operative to cause the operation of the first transaction function device in the operating step, and further comprising the steps of:

further accessing a further transaction machine operation document with the browser;

further operating the second transaction function device in the machine responsive to accessing the further transaction machine document with the browser;

further accessing a second document with the browser responsive to receipt of the further transaction machine operation document; and

further outputting a further output with the output device of the machine responsive to processing the second document with the browser.

63. The method according to clause 60 wherein the output includes a promotional message.

64. The method according to clause 62 wherein the output includes a first promotional message and the further output includes a second promotional message.

65. The method according to clause 61 and prior to the accessing step further comprising the steps of:

inputting user data corresponding to a first user into an input device of the automated transaction machine;

and prior to the step of accessing the first document, further comprising the step of determining an address of a first document to access

responsive to the user data input in the inputting step.

66. A method comprising the steps of:

a) executing a series of transaction steps with an automated transaction machine wherein between at least two of consecutive transaction steps a device in the machine operates:

b) accessing an HTML document with a browser in the machine:

c) providing an output through an output device on the machine responsive to the HTML document while the device operates.

67. The method according to clause 66 wherein step (a) includes a transaction step including a request to dispense at least one sheet, wherein a sheet dispenser device operates responsive to the transaction step, and wherein output in step (c) is provided during at least a portion of the time the sheet dispenser device operates.

68. A method comprising the steps of:

(a) providing a plurality of HTTP records accessible through an HTTP server, wherein at least one record includes data corresponding to operating data, wherein the operating data is operative to control operation of an automated transaction machine:

(b) accessing the one record data through the server with a computer in an automated transaction machine; and

(c) loading data corresponding to the operating data in a memory of the machine.

69. The method according to clause 68 wherein in step (a) a plurality of HTML documents are provided which are accessible through the server, and wherein the plurality of records include the plurality of documents, and wherein step (b) comprises accessing a document with a browser operating in a computer of the automated banking machine.

70. The method according to clause 69 wherein the document includes instructions, wherein in step (c) the operating data is loaded in memory responsive to the instructions in the document.

71. The method according to clause 68 and prior to step (c) further comprising the step of providing to the server data representative of an identity of the machine, where in the record data accessed in step (b) is accessed responsive to the identity data.

72. The method according to clause 68 wherein step (a) comprises providing a plurality of records

in a data store in operative connection with the server, wherein the records include operating data, wherein the operating data includes applets.

73. The method according to clause 68 wherein step (a) comprises providing a plurality of records in a data store in operative connection with the server, wherein the records include operating data, wherein the operating data includes instructions executable by a computer to access applets.

74. A system comprising:

an HTTP server, and a plurality records accessible through the server, at least one of the records including transaction machine operating data therein:

an automated transaction machine, the transaction machine including a computer, the computer including a memory; and

software executable in the computer, wherein the software is operative to access the one record and to store data corresponding to the machine operating data in the memory of the machine.

75. The system according to clause 74 wherein the transaction machine further comprises at least one transaction function device in operative connection with the computer, and wherein the transaction function device is changeable from a first condition to a second condition, and further comprising a second record accessible through the HTTP server, wherein the second record includes further machine operating data and wherein the software executable in the computer is further operative to access the second record and to store data corresponding to the further machine operating data in the memory responsive to a change in condition of the transaction function device.

76. The system according to clause 74 wherein the machine operating data includes an applet.

77. The system according to clause 74 wherein the machine operating data includes an instruction, and wherein the computer is operative responsive to operating data corresponding to the instruction in memory to access an applet from the HTTP server.

78. The system according to clause 74 and further comprising a data store in operative connection with the HTTP server, wherein the plurality of records are stored in the data store, and wherein the HTTP server includes a database server.

79. The system according to clause 74 wherein the automated transaction machine includes a plurality of transaction devices, and wherein the software executable in the computer includes a browser, and wherein the memory includes at least one document address, wherein the document address cor-

responds to at least one of the transaction devices in the machine, and further comprising a plurality of documents accessible through the HTTP server, wherein at least one document corresponding to the document address includes the operating data, and wherein the computer is operative to access the one document corresponding to the document address with the browser and to store data corresponding to the machine operating data in the accessed document in the memory of the machine.

80. The system according to clause 75 wherein the transaction devices include a sheet dispenser, and wherein a second of the documents accessible through the HTTP server includes transaction machine operating instructions to operate the sheet dispenser, wherein the software is further operative to access the second document with the browser and operates the sheet dispenser in response to the transaction machine operating instructions.

81. The system according to clause 74 and further comprising a network in operatively connecting the computer and the HTTP server, wherein the computer is operative to access the one record through the network.

82. The system according to clause 74 wherein the machine operating data includes Active-X code.

83. The system according to clause 74 wherein the machine operating data includes JAVA® code.

84. Apparatus comprising:

an automated transaction machine including:

a sheet dispenser;

a computer in operative connection with the sheet dispenser, the computer in operative connection with a memory;

software executable in the computer, the software including a browser, wherein the software is operative to cause the computer to access at least one HTML document address with the browser, wherein the document includes at least one document instruction therein, and wherein the software is operative to cause the computer responsive to the document instruction to access a dispense instruction at at least one HTTP address, wherein the computer responsive to the dispense instruction causes the sheet dispenser to operate to dispense sheets.

85. The apparatus according to clause 84 wherein the software is operative to cause the computer to access the HTTP address through the browser.

86. The apparatus according to clause 84 and further comprising a server, wherein an applet is accessible through the server at the one HTTP address, and wherein the dispense instructions are

delivered from the server to the computer.

87. The apparatus according to clause 86 wherein the dispense instructions include a JAVA applet.

88. The apparatus according to clause 86 wherein the dispense instructions include an Active-X™ file.

89. The apparatus according to clause 84 wherein the memory includes signature data and wherein the dispense instructions include data corresponding to a signature, and wherein the software is operative to cause the computer to compare the signature data and the signature, and wherein the computer operates the sheet dispenser responsive to the signature data and signature having a predetermined relationship.

90. The apparatus according to clause 84 wherein the memory includes address data, wherein the software is operative to limit access through the browser responsive to the address data.

91. Apparatus comprising:
an automated transaction machine including:

a transaction function device;

a computer in operative connection with the sheet dispenser, the computer in operative connection with a memory;

software executable in the computer, the software including a browser, wherein the software is operative to cause the computer to access at least one HTML document address with the browser, wherein the document includes at least one document instruction therein, and wherein the software is operative to cause the computer responsive to the document instruction to access a device instruction at at least one HTTP address, wherein the computer responsive to the device instruction causes the transaction function device to operate.

92. A method comprising the steps of:

(a) operating a browser in a computer in an automated transaction machine to access an HTML document including at least one transaction device document instruction therein;

(b) operating the computer responsive to the document instruction to access a device operation instruction at at least one HTTP address; and

(c) operating the transaction device in the machine responsive to the transaction device operation instruction.

93. The method according to clause 92 and further comprising the steps of:

storing in a memory in operative connection with the computer, signature data;

comparing a signature included with the device operation instruction to the signature data for a predetermined relationship; 5

wherein step (c) is performed responsive to the signature and signature data having the predetermined relationship. 10

94. The method according to clause 92 wherein in step (b) the computer accesses the one HTTP address through the browser.

95. The method according to clause 92 wherein in step (a) the document instruction includes a pointer to the HTTP address. 15

96. The method according to clause 92 wherein the device operation instruction includes a JAVA® applet. 20

97. The method according to clause 92 wherein the device operation instruction includes an Active-X™ file.

98. Apparatus comprising: 25

an automated transaction machine including:

a computer, the computer in operative connection with a memory; 30

an input device in operative connection with the computer, wherein the input device is operative to accept user inputs;

a sheet dispenser in operative connection with the computer, wherein the sheet dispenser is operative to dispense sheets; 35

software executable in the computer, wherein the software includes a first object operative to control the input device, and 40

a second object which is operative to control the sheet dispenser, wherein the computer is operative to access at least one HTTP address, wherein transaction device instructions are accessible at the address, and wherein the first object operates the input device and the second object operates the sheet dispenser responsive to the instructions, and wherein the software further includes a transaction data object, wherein the transaction data object is in operative connection with the first object and second object and is operative to store therein data representative of both user inputs to the input device and the dispense of sheets by the dispenser. 55

99. The apparatus according to clause 98 wherein the software includes a browser and wherein the computer is operative to access the address through the browser.

100. The apparatus according to clause 99 wherein at least one transaction device instruction is included in an HTML document.

101. The apparatus according to clause 98 wherein the input device includes a card reader, and wherein the transaction data object includes data representative of card data read by the card reader.

102. The apparatus according to clause 98 wherein the software further includes a third object in operative connection with the transaction data object, and wherein the third object is operative to access the data in the transaction data object.

103. The apparatus according to clause 102 wherein the machine further includes a printer, and wherein the third program is operative to control the printer, and wherein the third object is operative to cause the printer to print data corresponding to data stored in the transaction data object.

104. The apparatus according to claim 98 and further comprising at least one HTTP server, wherein the HTTP address corresponds to the server, wherein a plurality of transaction device instructions are accessible through the server, wherein first instructions are accessible at a first address and second instructions are accessible at a second address and wherein the computer is operative to access the first instructions at the first address and the first object is operative to control the input device responsive to the first instructions, and wherein the computer is operative to access the second instructions at the second address and the second object is operative to control the sheet dispenser responsive to the second instructions.

105. The apparatus according to clause 104 wherein the software further comprises a browser, and wherein the computer is operative to access the first and second instructions through the browser.

106. The apparatus according to clause 98 and further comprising a back office processing system in operative connection with the computer, and wherein the software is operative to communicate at least a portion of the data stored in the transaction data object to the back office processing system.

107. The apparatus according to clause 98 wherein the transaction device instructions include an applet.

108. A method comprising the steps of:

(a) operating a first device in an automated transaction machine responsive to first device operating instructions accessed by a computer in the machine at a first HTTP address;

(b) generating first data with the first device, re-

sponsive to operation of the first device; and

(c) storing the first data in a transaction data object in a memory in operative connection with the computer.

109. The method according to clause 108 wherein the first device is a sheet dispenser and the first data is representative of a dispense of at least one sheet by the sheet dispenser.

110. The method according to clause 108 and further comprising the steps of:

(d) operating a second device in the machine responsive to second device operating instructions accessed by the computer at a second FITTP address:

(e) generating second data with the second device, responsive to operation of the second device; and

(f) storing the second data in the transaction data object.

111. The method according to clause 110 wherein the first device includes a card reader and the second device includes a keyboard, and wherein the first data includes data representative of card data read from a card and the second data includes data representative of an input to the keyboard.

112. The method according to clause 108 and further comprising the steps of:

(d) accessing the data included in the transaction data object with a software object operative in the computer; and

(e) controlling a second device in the machine with the computer responsive to the object and the data in the transaction data object.

113. The method according to clause 112 wherein in step (e) the second device includes a printer, and wherein in step (e) the printer is operative to print indicia corresponding to data in the transaction data object.

114. The method according to clause 108 wherein the computer includes a browser and wherein step (a) comprises accessing the first address with the browser.

115. A method comprising the steps of:

(a) accepting identifying data from a user of an automated banking machine:

(b) storing data corresponding to the identifying data in a transaction data object in software operating in a first computer in operative connection

with the machine:

(c) conducting a first transaction responsive to a user input to the machine, wherein conducting the first transaction includes accessing the data in the transaction data object.

116. The method according to clause 115 wherein step (c) includes operating a first transaction function device in the machine, and further comprising the step of:

(d) storing data corresponding to operation of the transaction function device in the transaction data object.

117. The method according to clause 115 and further comprising the step of:

(d) conducting a second transaction responsive to a user input to the machine, wherein conducting the second transaction includes accessing the data in the transaction data object.

118. The method according to clause 115 and further comprising the step of:

(d) accounting for the first transaction by the user, including passing the transaction data object from the first computer.

119. The method according to clause 115 and further comprising the step of:

(d) producing a printed record corresponding to the first transaction with the machine, including accessing the data in the transaction data object and producing indicia in the printed record corresponding to at least a portion of the data stored in the transaction data object.

120. Apparatus comprising:

an ATM host, wherein the ATM host is operative to send and receive ATM transaction messages; and

an HTTP server in operative connection with a database, wherein the database includes conversion data, wherein the server includes server software operative responsive to an ATM transaction message sent by the ATM host and the conversion data, to generate at least one data object including transaction data.

121. The apparatus according to clause 120 and further comprising:

a transaction function device operative to carry out a transaction function: and

a computer in operative connection with the transaction function device, and device software executable in the computer, wherein the computer is operative responsive to the device software to access the data object and to operate the transaction function device responsive to the transaction data in the data object.

122. The apparatus according to clause 121 wherein the transaction function device includes a sheet dispenser.

123. The apparatus according to clause 120 wherein the server software is operative to pass the data object from the server to the computer by remote method invocation (RMI).

124. The apparatus according to clause 120 and further comprising:

a transaction function device operative to carry out a transaction function: and

a computer in operative connection with the transaction function device, and device software executable in the computer, wherein the device software includes the data object, and wherein the computer is operative responsive to operation of the transaction function device to include in the data object modified transaction data, and wherein the computer is operative responsive to the device software to deliver the data object including the modified transaction data, to the server.

125. The apparatus according to clause 124 wherein the server software is operative responsive to receipt of the data object including the modified transaction data and the conversion data, to cause the server to generate a further transaction message to the ATM host.

126. Apparatus comprising:

an automated transaction machine, wherein the machine includes a customer input device and a sheet dispenser, the machine further including a computer in operative connection with the customer input device and the sheet dispenser, the computer further including machine software executable therein;

an HTTP server in operative connection with the computer, wherein the server includes server software, and wherein

responsive to the server software the server is operative to receive and transmit HTTP mes-

sages, and further comprising a data store including conversion data in operative connection with the server:

a host, wherein the host is in operative connection with the server and is operative to send and receive non-HTTP transaction messages to the server:

wherein the server software operates the HTTP server responsive to receipt of a transaction message from the host and the conversion data, to generate at least one HTTP transferable file including transaction data therein, wherein the computer is operative responsive to the machine software therein to access the file and to operate at least one of the customer input device and the sheet dispenser, responsive to the transaction data in the file.

127. The apparatus according to clause 126 wherein the HTTP transferable file comprises a data object, and wherein the server and computer are operative to pass the data object to the computer in the transaction machine.

128. The apparatus according to clause 126 wherein the machine software is operative responsive to operation of the sheet dispenser to include modified transaction data in the data object.

129. The apparatus according to clause 128 wherein the machine software is further operative to pass the data object including the modified transaction data to the server, and wherein the server software is operative responsive to the receipt of the data object including the modified transaction data to cause the server to send a further transaction message to the host.

130. The apparatus according to clause 129 wherein the transaction message and further transaction message include 91x ATM transaction messages.

131. A method comprising the steps of:

(a) generating an ATM transaction message with an ATM host: and

(b) generating with a server responsive to the ATM transaction message, at least one HTTP transferable file including transaction data therein, wherein at least a portion of the transaction data corresponds to the ATM transaction message.

132. The method according to clause 131 and further comprising the steps of:

(c) receiving the HTTP transferable file with a computer in an ATM: and

(d) operating at least one transaction function device in the ATM responsive to the transaction data in the file.

133. The method according to clause 132, and wherein in step (b) the file includes a data object, and step (c) includes passing the data object from the server to the computer. 5

134. The method according to clause 133 and further comprising the steps of: 10

(e) modifying the transaction data in the data object responsive to operation of the transaction function device: 15

(f) passing the data object including the modified transaction data from the computer to the server: 20

(g) generating a further ATM transaction message to the ATM host wherein the further message includes at least a portion corresponding to the modified transaction data. 25

135. Apparatus comprising: 30

an automated transaction machine including at least one computer, and a display and at least one transaction function device in operative connection with the computer, the computer including software executable therein, the software including a browser: 35

a host, wherein the host is in operative connection with the computer, wherein the host is operative to send a first message to the computer, and wherein the computer is operative responsive to the first message to operate the transaction function device: 40

a server, and at least one first HTML document accessible through the server, wherein the computer is operative to access the first document with the browser and to control the display responsive to the first document. 45

136. The apparatus according to clause 135 wherein the transaction function device includes a sheet dispenser.

137. The apparatus according to clause 135 wherein a plurality of documents are accessible through the server, and wherein the computer is selectively operative to access documents with the browser responsive to operation of the transaction function device. 50

138. The apparatus according to clause 135 wherein the server communicates with the browser through HTTP messages, and wherein the host 55

communicates with the computer through non-HTTP messages.

139. A method comprising in any order, the steps of:

(a) operating at least one transaction function device on an automated transaction machine in response to a transaction message received from a host:

(b) accessing a first HTML document with a browser in the machine responsive to operation of the transaction function device: and

(c) controlling an output device on the automated transaction machine responsive to first instructions included in the first HTML document accessed with the browser.

140. The method according to clause 139 and further comprising the steps of:

(d) operating a second transaction function device on the machine responsive to operation of the first transaction function device:

(e) accessing a second HTML document including second instructions with the browser, responsive to operation of the second transaction function device: and

(f) controlling the output device responsive to the instructions included in the second HTML document.

141. The method according to clause 139 wherein the transaction function device includes a sheet dispenser, and wherein step (a) includes dispensing at least one sheet.

142. Apparatus comprising:

an automated transaction machine including at least one transaction function device, a server in operative connection with the transaction function device, at least one HTML document accessible through the server, wherein at least one first document includes indicia corresponding to a status of the transaction function device.

143. The apparatus according to clause 142 wherein the transaction function device is operative responsive to an HTTP message received by the server.

144. The apparatus according to clause 142 wherein the status is representative of a fault in the transaction function device.

145. The apparatus according to clause 142 wherein the machine includes a plurality of transaction

function devices, and wherein the HTML document accessible through the server include indicia corresponding to a status of each of a plurality of transaction function devices.

146. The apparatus according to clause 142 wherein the machine is an ATM. 5

147. The apparatus according to clause 142 and further comprising a portable terminal, wherein the portable terminal includes a browser, wherein the terminal is operative to access documents through the server. 10

148. A method comprising:

operating a transaction function device in an automated transaction machine, the transaction function device having an associated status; and 15

generating at least one first HTML document including first instructions corresponding to the status of the transaction function device. 20

149. The method according to clause 148 and further comprising the step of accessing the first document with a terminal including a browser. 25

150. The method according to clause 149 wherein the accessing step includes accessing the first document with a portable terminal adjacent to the automated transaction machine.

151. The method according to clause 149 wherein the accessing step includes accessing the first document through a network with a terminal located remotely from the automated transaction machine. 30

152. The method according to clause 148 and further comprising the steps of: 35

receiving a second HTML document with the machine, the second document including second instructions; and 40

operating the transaction function device responsive to the second instructions.

153. Apparatus comprising: 45

an automated transaction machine including a plurality of transaction function devices, wherein each of the transaction function devices has an associated status, wherein the status is indicative of an operative condition of the transaction function device; 50

a transaction machine computer in operative connection with the transaction function devices, and further comprising machine software executable in the computer, wherein the software is operative to cause the computer to generate at least one HTTP record including indicia 55

representative of the status of at least one transaction function device, and wherein the software further includes a server, wherein the first HTTP record is accessible through the server.

154. The apparatus according to clause 153 wherein the HTTP record comprises an HTML document.

155. The apparatus according to clause 153 wherein the HTTP record comprises a data object.

156. The apparatus according to clause 155 and further comprising a terminal computer outside the automated transaction machine, a communications connection operatively connecting the transaction machine computer and the terminal computer, and further comprising terminal software in the terminal computer, wherein the terminal software and the machine software are operative to transfer the data object from the transaction machine to the terminal computer.

157. A method comprising the steps of:

(a) checking to determine whether a document address is operative to enable transferring at least one HTTP record corresponding to the address, with a computer operating in an automated banking machine; and

(b) responsive to determining with the computer program in step (a) that the address is operative, transferring the one HTTP record to the computer operating in the automated banking machine.

158. The method according to clause 157 wherein in step (a) the HTTP record includes an HTML document and wherein step (b) includes accessing the HTML document with a browser operative in the computer of the automated banking machine.

159. The method according to clause 157 wherein responsive to determining in step (a) that the address is not operative, step (b) is not executed, and further comprising the step of:

(c) responsive to determining in step (a) that the address is not operative, transferring at least one alternative HTTP record to the computer from an alternative address.

160. The method according to clause 159 and prior to the step (c) further comprising the step of:

(d) checking to determine whether the alternative address is operative to enable transferring the at least one alternative HTTP record with the computer operating in the machine, wherein step (c) is executed responsive to determining that the alternative address is operative.

161. The method according to clause 59 wherein the computer in the banking machine is in operative connection with a memory, and wherein the alternative address corresponds to address data stored in the memory, and prior to step (c) further comprising the step of accessing with the computer the address data stored in the memory, and using the address data to determine the alternative address used in step (c). 5

162. The method according to clause 159, and prior to step (c) further comprising the steps of: 10

(d) responsive to determining with the computer in step (a) that the address is not operative, accessing a further HTTP record with the computer, wherein the further HTTP record includes address data; and 15

(e) determining with the computer the alternative address from the address data in the further HTTP record. 20

163. The method according to clause 157 wherein the automated banking machine includes a sheet dispenser, and wherein the one HTTP record includes a dispense instruction, and further comprising the step of: 25

(c) dispensing at least one sheet with the sheet dispenser responsive to the dispense instruction in the one HTTP record accessed in step (b). 30

164. The method according to clause 157 wherein the automated banking machine includes a transaction function device, and wherein the one HTTP record includes a device instruction, and further comprising the step of: 35

(c) operating the transaction function device responsive to the device instruction in the one HTTP record accessed in step (b). 40

165. The method according to clause 164 and wherein the one HTTP record includes data corresponding to a signature, and wherein the computer is in operative connection with a memory, wherein the memory includes signature data corresponding to at least one signature, and prior to step (c) further comprising the step of: 45 50

(d) comparing the signature in the one HTTP record and the signature data in the memory with the computer, and executing step (c) responsive to the signature in the one HTTP record having a predetermined relationship to the signature data stored in memory. 55

166. The method according to clause 157 wherein step (a) includes making a socket connection with a remote server.

167. Computer software operating an automated banking machine in accordance with the method recited in clause 157.

168. The method according to clause 157 and prior to completion of step (b) further comprising the step of:

(c) determining a transfer speed at which the one HTTP record is transferable to the computer.

169. The method according to clause 168 and further comprising the steps of:

(d) comparing data corresponding to the transfer to data representative of a speed value stored in memory with the computer; and

(e) responsive to the results of the comparison in step (d), transferring at least one alternative HTTP record to the computer from an alternative address.

170. Apparatus comprising:

an automated banking machine including:

at least one transaction function device:

a computer in operative connection with the transaction function device:

software executable in the computer, wherein the software is operative to transfer at least one HTTP record at a document address to the computer, and wherein the one record includes at least one device instruction, wherein the computer operates the transaction function device responsive to the device instruction included in the one record, and wherein the software further includes a program, wherein prior to transferring the one HTTP record the program is operative to cause the computer to determine if the record address is operative to enable accessing the one record, and wherein the computer operates to transfer the one HTTP record responsive to the program determining that the address is operative.

171. The apparatus according to clause 170 wherein the software in the computer includes a browser, and wherein the one HTTP record includes an HTML document, and wherein the computer oper-

ates to transfer the HTML document by accessing the document with the browser.

172. The apparatus according to clause 170, wherein the computer is operative responsive to the program determining that the address is not operative to determine an alternative record address, and further comprising at least one alternative HTTP record including device instructions is accessible at the alternative address, and wherein the computer is operative to access the alternative HTTP record.

173. The apparatus according to clause 172 wherein the program is further operative prior to the computer accessing the alternative HTTP record to cause the computer to determine if the alternative address is operative to enable accessing the alternative HTTP record, and wherein the computer operates to transfer the alternative HTTP record responsive to determining that the alternative address is operative.

174. The apparatus according to clause 170 and further comprising a server, and wherein the one HTTP record is accessible through the server, and wherein program operates such that prior to the computer operating to access the one HTTP record the program operates the computer to determine if the server is operative.

175. The apparatus according to clause 172 and further comprising a memory wherein the computer is in operative connection with the memory, and wherein the memory includes address data, and wherein the computer is operative to determine the alternative address responsive to the address data.

176. The apparatus according to clause 175 wherein the address data corresponds to a further HTTP record, and wherein the computer is operative to access the further HTTP record, and wherein the further HTTP record includes address instructions corresponding to the alternative address, and wherein the software is operative to cause the computer to determine the alternative address responsive to the address instructions.

177. The apparatus according to clause 170 wherein the transaction function device includes a sheet dispenser, and wherein the sheet dispenser is operative to dispense at least one sheet responsive to the device instruction included in the one HTTP record.

178. The apparatus according to clause 170 and wherein the software includes a further program, wherein the further program is operative to cause the computer to determine a value corresponding to a transfer speed for transfer of the one HTTP record to the computer.

179. The apparatus according to clause 178 and further comprising a memory in operative connection with the computer, and wherein the further program is operative to operate the computer to compare the transfer speed to data representative of a

value stored in memory, and wherein the software is operating to access an alternative HTTP record responsive to a result of the comparison, whereby an alternative record may be accessed responsive to the one HTTP record transferring too slowly.

180. The apparatus according to clause 178 wherein the software is operative to cause the computer to determine a file size corresponding to the one HTTP record and a transfer rate, and wherein the transfer speed is determined responsive to the file size and the transfer rate.

181. The apparatus according to clause 180 wherein the one HTTP record includes an HTML document.

182. A method comprising the steps of:

(a) producing a first function key input signal by pressing a first function key on an automated banking machine;

(b) converting the first function key input signal to a first mouse input signal including indicia corresponding to a first mouse input location; and

(c) delivering the first mouse input signal to a mouse input stream of a computer in operative connection with the automated banking machine.

183. The method according to clause 182 wherein the machine includes a screen, and wherein the first function key is adjacent to the screen on the machine, and wherein the first mouse input location is on the screen adjacent to the first function key.

184. The method according to clause 182 and further comprising the steps of:

(d) producing a second function key input signal by pressing a second function key on the automated banking machine;

(e) converting the second function key input signal to a second mouse input signal including indicia corresponding to a second mouse input location disposed of the first location; and

(f) delivering the second mouse input signal to the mouse input stream of the computer.

185. The method according to clause 184 wherein the automated banking machine includes a screen, wherein the first function key is disposed on the machine adjacent the screen, and wherein the second function key is positioned on the machine adjacent the screen and is disposed from the first function key, and wherein the first mouse input location is on the screen adjacent the first function key and the

second mouse input location is on the screen adjacent the second function key.

186. The method according to clause 182 and further comprising the steps of:

(d) producing a first keypad input signal by pressing a first keypad key on the automated banking machine:

(e) converting the first keypad key input signal to a first keyboard input signal: and

(f) delivering the first keyboard input signal to a keyboard input stream of the computer.

187. The method according to clause 182 and further comprising the steps of:

d) producing a first keypad input signal by pressing a first keypad key on the automated banking machine:

e) converting the first keypad input signal to a second mouse input signal including indicia corresponding to a second mouse input location disposed of the first location: and

f) delivering the second mouse input signal to the mouse input stream of the computer.

188. The method according to clause 182 wherein the machine includes a data store, and wherein the data store includes conversion data, wherein the conversion data is usable to convert at least one function key input signal to a mouse input signal, and prior to step (e) further comprising the step of:

(d) obtaining from the data store the conversion data and converting the first function key input signal to the first mouse input signal using the conversion data.

189. The method according to clause 188 wherein the conversion data includes coordinate data corresponding to at least one mouse input location, and wherein in step (d) the conversion data includes coordinate data.

190. The method according to clause 188 wherein the machine includes at least one server in operative connection with the computer, and prior to step (d) further comprising the step of:

(e) accessing a first HTTP record through the server, wherein in step (d) the conversion data is obtained responsive to accessing the first record.

191. The method according to clause 190 wherein

the conversion data includes a plurality of sets, and wherein each set corresponds to at least one HTTP record, and wherein in step (d) the conversion data is obtained from a first set corresponding to the first record.

192. The method according to clause 182 wherein the machine includes a plurality of function keys, and prior to step (a) further comprising the step of:

selectively enabling the first function key, wherein the first function key input signal is generated responsive to the first function key being pressed.

193. The method according to clause 188 wherein the machine includes a plurality of function keys and further comprising the step of:

(e) disabling operation of a second function key on the machine responsive to the conversion data provided in step (d), wherein pressing the second function key does not result in the delivery of a signal to the mouse input stream.

194. The method according to clause 193 wherein the machine includes at least one server in operative connection with the computer, and prior to step (d) further comprising the step of:

(f) accessing a first HTTP record through the server, wherein the conversion data in step (e) operative to disable the second function key is obtained responsive to accessing the first record.

195. An automated banking machine operated in accordance with the method recited in clause 182.

196. At least one article including computer software stored thereon, wherein the computer software is operative when executed in a computer in an automated banking machine to operate the machine in accordance with the method recited in clause 182.

197. The method according to clause 182 wherein the automated banking machine comprises a screen, and wherein the computer is operative to provide a mouse location indicator visible on the screen, and further comprising the step of:

suppressing the mouse location indicator, wherein the mouse location indicator is generally not visible when viewing the screen.

198. The method according to clause 190 wherein in step (e) the HTTP record includes an HTML document.

199. A method comprising the steps of:

(a) producing a first keypad key input signal by pressing a first keypad key on an automated banking machine:

(b) converting the first keypad key input signal to a first keyboard input signal: and 5

(c) delivering the first keyboard input signal to a first keyboard input stream of a computer in operative connection with the automated banking machine. 10

200. The method according to clause 199 wherein the machine includes software executable in the computer, wherein the software includes a browser, and at least one server in operative connection with the computer, and further comprising the steps of: 15

(d) accessing a first HTTP record through the server, and responsive to the first record accessed either: 20

(e) delivering a signal indicative of the first keypad key pressed in step (a) to the browser: or 25

(f) delivering a signal not indicative of the first keypad key pressed in step (a) to the browser.

201. The method according to clause 200 wherein the first in step (d) the first HTTP record includes a first HTML document, and wherein the first HTML document includes a request for a customer to enter a PIN number, and wherein the first keypad key corresponds to a part of the PIN number, and wherein alternative step (f) is carried out responsive to step (a). 30

202. The method according to clause 199 wherein the machine comprises a plurality of function keys and a plurality of keypad keys, and wherein the machine further comprises a browser operating in the computer, wherein the computer is in operative connection with a server, and further comprising the steps of: 35

(d) accessing a first HTML document through the server with the browser: 40

(e) selectively enabling selected ones of the function keys and keypad keys to produce representative signals when pressed, responsive to the first HTML document accessed in the accessing step. 45

203. The method according to clause 202 wherein in step (e) all of the keypad keys and function keys are not enabled responsive to the accessing the first HTML document, whereby transaction speed is increased. 50

204. A method comprising the steps of:

a) producing a first keypad key input signal by pressing a first keypad key on an automated banking machine:

b) converting the first keypad key input signal to a first mouse input signal including indicia corresponding to a first mouse input location: and

c) delivering the first mouse input signal to a mouse input stream of a computer in operative connection with an automated banking machine.

205. An automated banking machine operated in accordance with the method steps recited in clause 204.

206. At least one article including computer software thereon, wherein the computer software is operative when executed in a computer of an automated banking machine to operate the machine in accordance with the method recited in clause 204.

207. A method of printing a document with an automated banking machine, comprising the steps of:

(a) conducting at least one transaction with the machine:

(b) storing transaction data corresponding to the transaction in a memory in operative connection with a computer, wherein the computer is operatively connected with the machine:

(c) accessing a first HTML document with a browser operating in the computer, wherein the first HTML document includes at least one print instruction: and

(d) printing indicia corresponding to the transaction data in the memory with a printer in the machine responsive to the print instruction included in the first document.

208. The method according to clause 207 wherein the first HTML document includes instructions therein corresponding to a format, and wherein in step (d) the indicia is printed in accordance with the format.

209. The method according to clause 207 and further comprising the step of:

inputting customer identifying information to the machine, wherein data corresponding to the customer identifying information is included in the transaction data stored in the storing step.

210. The method according to clause 209 wherein the inputting step includes inputting a card into a card reader on the machine, wherein the customer identifying information corresponds to indicia read by the card reader from the card.

211. The method according to clause 207 wherein the transaction conducted in step (a) includes the dispense of at least one sheet from a sheet dispenser in the machine.

212. An automated banking machine operated in accordance with the method recited in clause 207.

213. A machine operated in accordance with the method recited in clause 207.

214. The method according to clause 207 and further comprising the steps of:

e) providing a plurality of HTML documents accessible through a server, said documents including the first document, and a second document wherein the second document includes at least one second print instruction:

f) accessing the second HTML document with the browser;

g) printing indicia corresponding to the transaction data in memory with the printer in the machine responsive to the second print instruction included in the second document.

215. The method according to clause 214 wherein the first document includes indicia in a first language and the second document includes indicia in a second language, and wherein in step (d) a printed item including transaction indicia is produced in a first language and in step (g) a printed item is produced including transaction indicia in a second language.

216. The method according to clause 207 wherein the first document includes indicia representative of machine readable indicia, wherein in step (d) a printed item is produced including machine readable indicia.

217. The method according to clause 207 wherein in step (d) the printer is operative to print a transaction receipt.

218. The method according to clause 207 wherein in step (d) the printer is operative to print a check.

219. The method according to clause 207 wherein in step (d) the printer is operative to print a wagering slip.

220. An automated banking machine including:

a plurality of transaction function devices, the transaction function devices including a printer and an input device;

a computer in operative connection with the

transaction function devices and a memory, wherein the computer includes software executable therein, wherein the software includes a browser;

wherein the software is operative to cause the computer to store in the memory transaction data representative of at least one input to an input device, and wherein the software is operative to cause the browser to access an HTML document including at least one print instruction and to operate the printer to print an item responsive to the print instruction and the transaction data.

Claims

1. Apparatus comprising:

an automated transaction machine including:

a computer, the computer in operative connection with a memory;

an input device in operative connection with the computer, wherein the input device is operative to accept user inputs;

a sheet dispenser in operative connection with the computer, wherein the sheet dispenser is operative to dispense sheets;

wherein the computer includes a first object operative to control the input device, and a second object which is operative to control the sheet dispenser, wherein the computer is operative to access at least one HTTP address, wherein transaction device instructions are accessible at the address, and wherein the first object operates the input device and the second object operates the sheet dispenser responsive to the instructions, and wherein the computer further includes a transaction data object, wherein the transaction data object is in operative connection with the first object and second object and is operative to store therein data representative of both user inputs to the input device and the dispense of sheets by the dispenser.

2. The apparatus according to claim 168 wherein the computer includes a browser and wherein the computer is operative to access the address through the browser.

3. The apparatus according to claim 2 wherein at least one transaction device instruction is included in an HTML document.

4. The apparatus according to claim 1, 2 or 3 wherein the input device includes a card reader, and wherein the transaction data object includes data representative of card data read by the card reader.

5. The apparatus according to claim 1, 2, 3 or 4 wherein the computer further includes a third object in operative connection with the transaction data object, and wherein the third object is operative to access the data in the transaction data object.

6. The apparatus according to claim 5 wherein the machine further includes a printer, and wherein the third program is operative to control the printer, and wherein the third object is operative to cause the printer to print data corresponding to data stored in the transaction data object.

7. The apparatus according to claim 1 and further comprising at least one HTTP server, wherein the HTTP address corresponds to the server, wherein a plurality of transaction device instructions are accessible through the server, wherein first instructions are accessible at a first address and second instructions are accessible at a second address and wherein the computer is operative to access the first instructions at the first address and the first object is operative to control the input device responsive to the first instructions, and wherein the computer is operative to access the second instructions at the second address and the second object is operative to control the sheet dispenser responsive to the second instructions.

8. The apparatus according to claim 7 wherein the computer further comprises a browser, and wherein the computer is operative to access the first and second instructions through the browser.

9. The apparatus according to any one of the preceding claims and further comprising a back office processing system in operative connection with the computer, and wherein the computer is operative to communicate at least a portion of the data stored in the transaction data object to the back office processing system.

10. The apparatus according to any one of the preceding claims wherein the transaction device instructions include an applet.

11. A method comprising the steps of:

(a) operating a first device in an automated transaction machine responsive to first device operating instructions accessed by a computer in the machine at a first HTTP address:

(b) generating first data with the first device, responsive to operation of the first device; and

(c) storing the first data in a transaction data object in a memory in operative connection with the computer.

12. The method according to claim 11 wherein the first device is a sheet dispenser and the first data is representative of a dispense of at least one sheet by the sheet dispenser.

13. The method according to claim 11 or 12 and further comprising the steps of:

(d) operating a second device in the machine responsive to second device operating instructions accessed by the computer at a second HTTP address:

(e) generating second data with the second device, responsive to operation of the second device; and

(f) storing the second data in the transaction data object.

13. The method according to claim 13 wherein the first device includes a card reader and the second device includes a keyboard, and wherein the first data includes data representative of card data read from a card and the second data includes data representative of an input to the keyboard.

15. The method according to claim 11 and further comprising the steps of:

(d) accessing the data included in the transaction data object with an object operative in the computer; and

(e) controlling a second device in the machine with the computer responsive to the object and the data in the transaction data object.

16. The method according to claim 15 wherein in step (e) the second device includes a printer, and wherein in step (e) the printer is operative to print indicia corresponding to data in the transaction data object.

17. The method according to claim 11 wherein the computer includes a browser and wherein step (a) comprises accessing the first address with the browser.

18. A method comprising the steps of:

(a) accepting identifying data from a user of an automated banking machine;

(b) storing data corresponding to the identifying data in a transaction data object in software operating in a first computer in operative connection with the machine; 5

(c) conducting a first transaction responsive to a user input to the machine, wherein conducting the first transaction includes accessing the data in the transaction data object. 10

19. The method according to claim 18 wherein step (c) includes operating a first transaction function device in the machine, and further comprising the step of: 15

(d) storing data corresponding to operation of the transaction function device in the transaction data object. 20

20. The method according to claim 18 and further comprising the step of: 25

(d) conducting a second transaction responsive to a user input to the machine, wherein conducting the second transaction includes accessing the data in the transaction data object. 30

21. The method according to claim 18 and further comprising the step of:

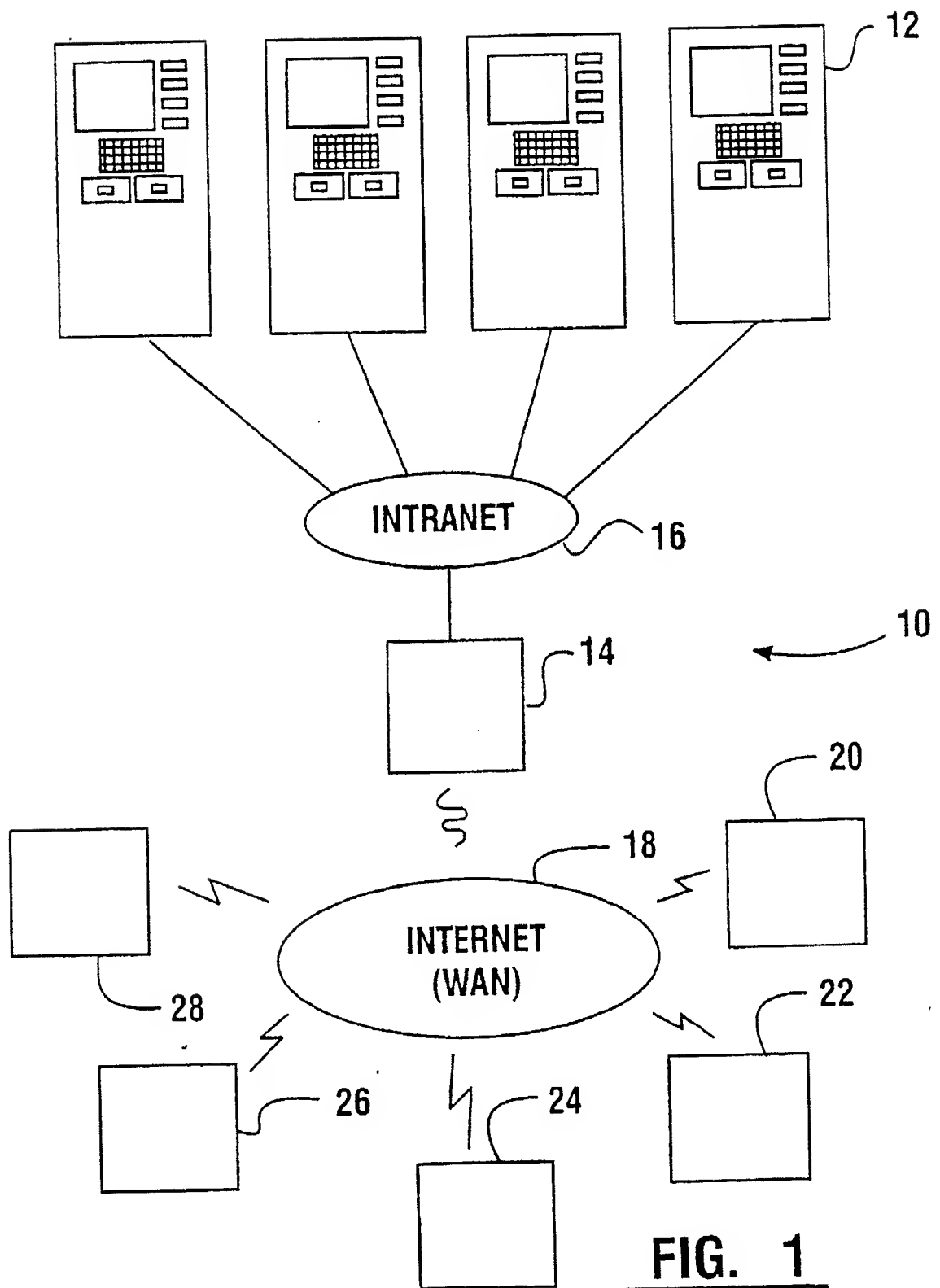
(d) accounting for the first transaction by the user, including passing the transaction data object from the first computer. 35

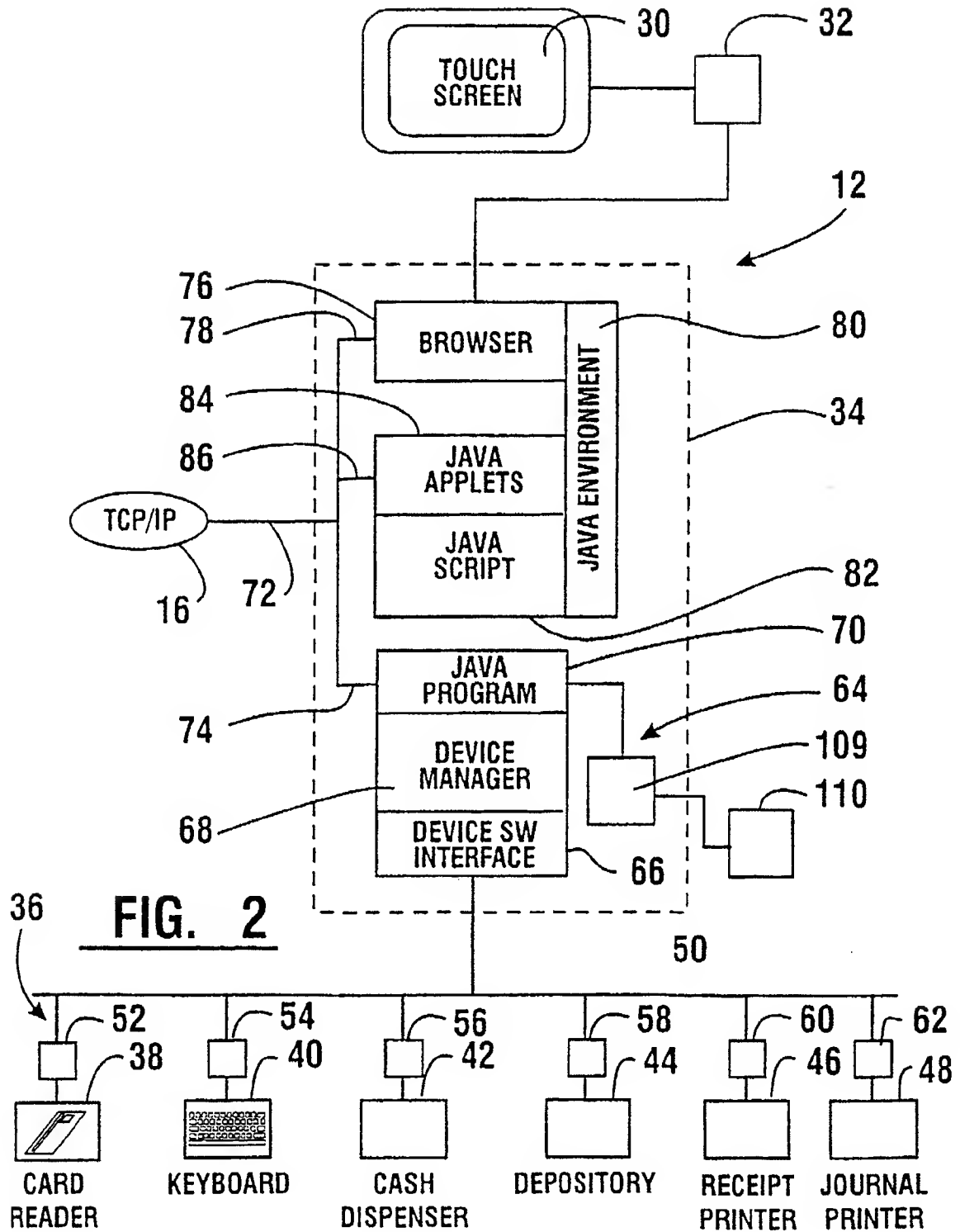
22. The method according to claim 18 and further comprising the step of: 40

(d) producing a printed record corresponding to the first transaction with the machine, including accessing the data in the transaction data object and producing indicia in the printed record corresponding to at least a portion of the data stored in the transaction data object. 45

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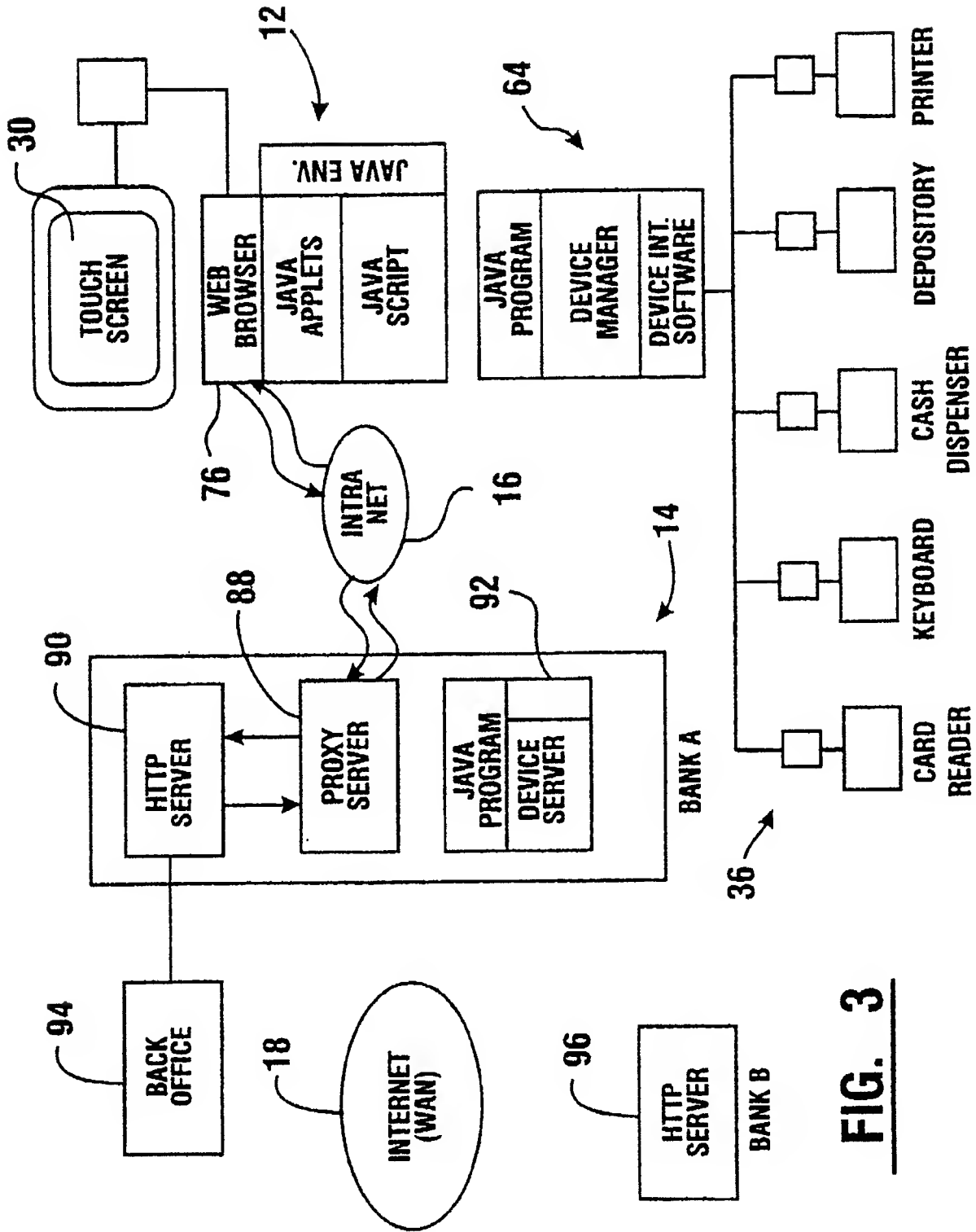


FIG. 3

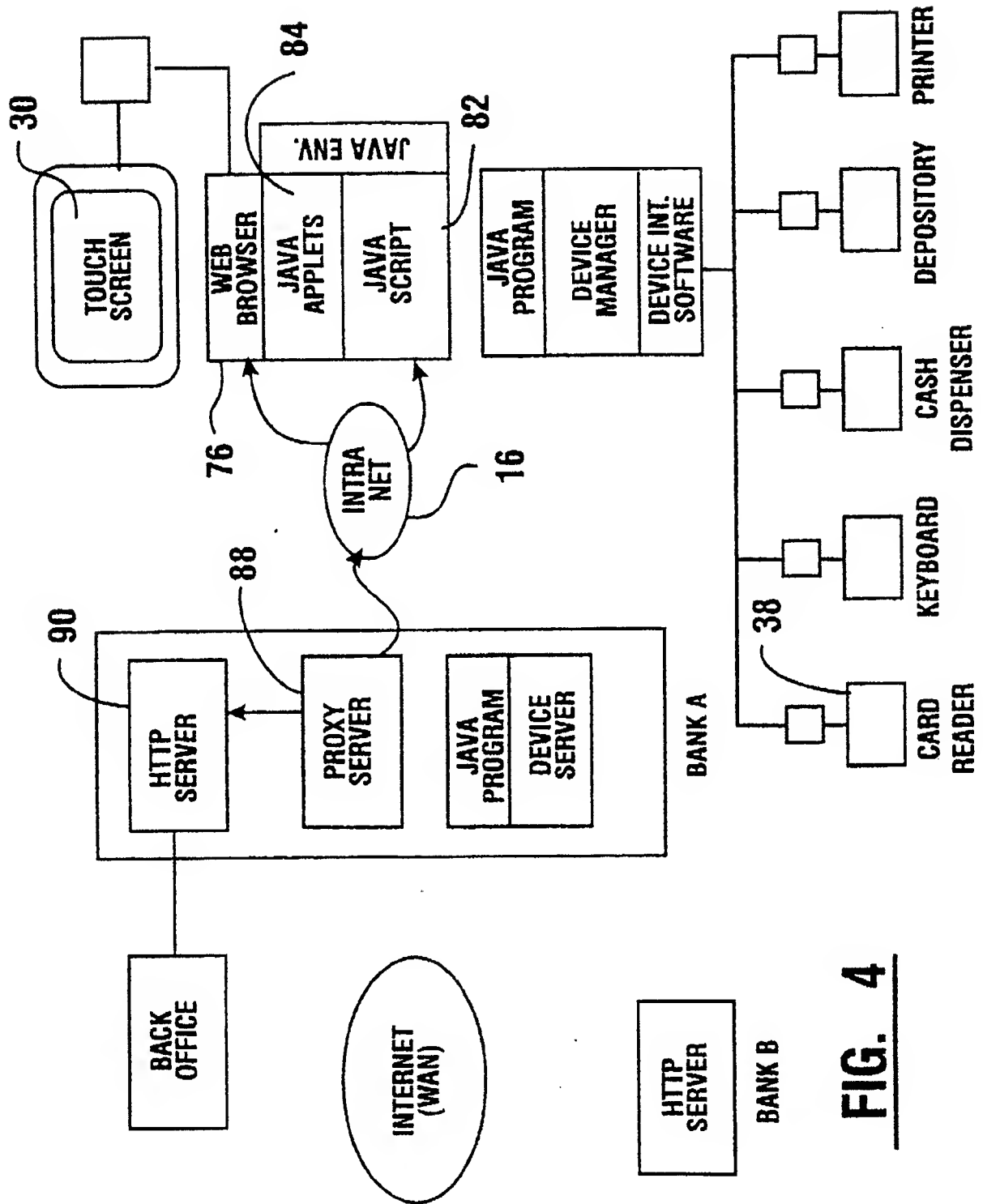


FIG. 4